

### Abstract

A direct injection engine is coupled to a vacuum brake booster wherein vacuum created from engine pumping is used to supplement driver braking force. The brake booster is coupled  
5 through a check valve to the engine intake manifold. A method is disclosed for estimating pressure in the brake booster based on operating conditions. A method is also disclosed for estimating operating parameters based on measured brake booster pressure. Further, a method is disclosed for  
10 diagnosing degradation, or monitoring, a brake booster pressure sensor based on operating conditions. In addition, a method is disclosed for diagnosing degradation in other vehicle and engine sensors based on measured brake booster pressure.